

Commissioned by:



German FinTech landscape: opportunity for Rhein-Main-Neckar

March 2nd, 2016 – 9. Finanzplatztag
Frankfurt



The better the question, The better the answer
The better the world works



What is FinTech?

“Silicon Valley is coming!

There are hundreds of start-ups with a lot of brains and money working on various alternatives to traditional banking.”

Jamie Dimon, Chairman and CEO of JP Morgan Chase

“We are aiming to better serve our customers and improve our daily interactions with them by embracing the FinTech Companies which have potential to bring new approaches to the insurance model.”

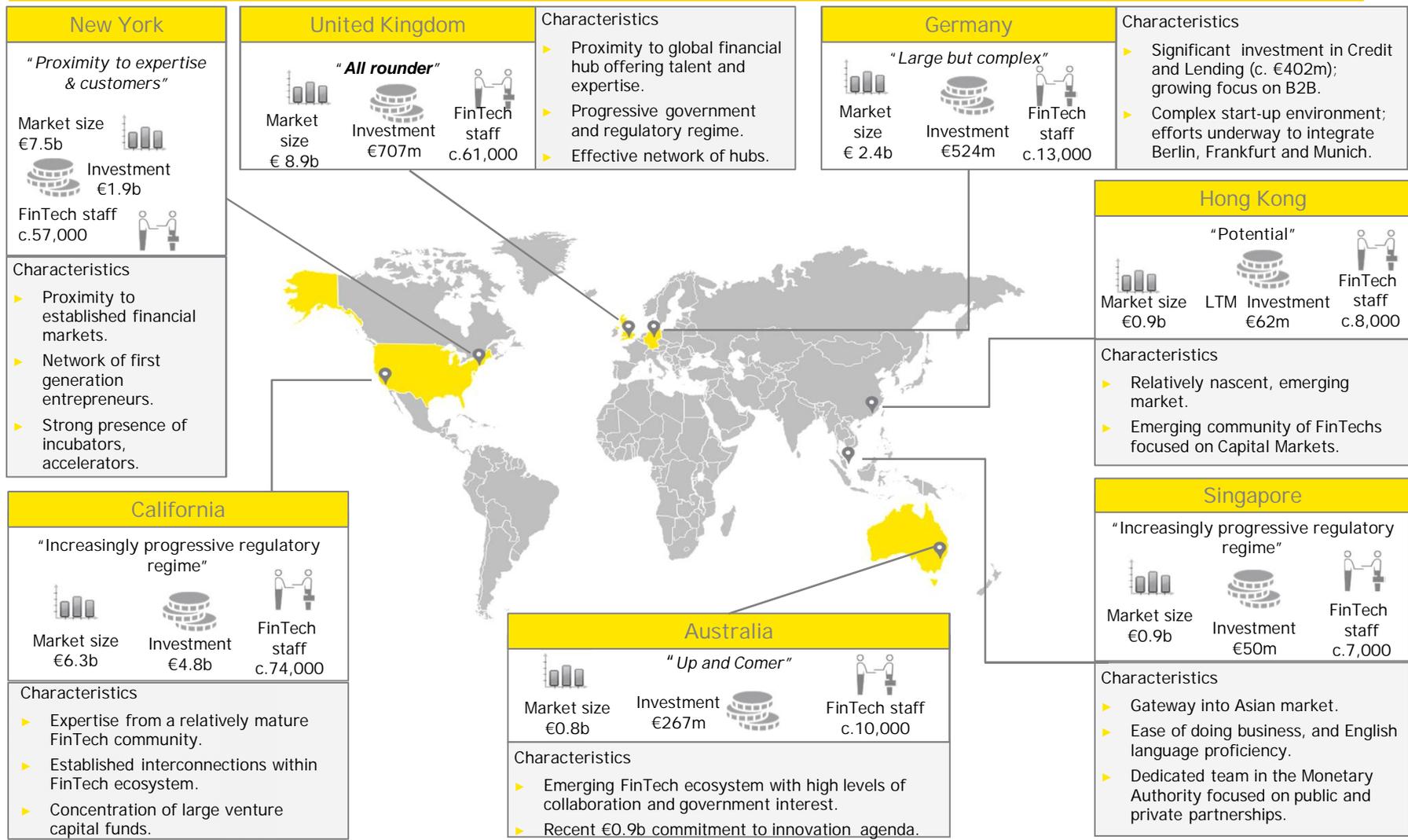
Henri de Castries, Chairman FinTech and CEO of AXA

“We are looking for innovative and disruptive technological ideas and solutions that will support the transformation of the banking industry.”

Sergio Emotti, CEO of UBS

EY Definition: “Organisations combining innovative business models and technology to enable, enhance and disrupt financial services”

A comparative snapshot of the major global FinTech regions

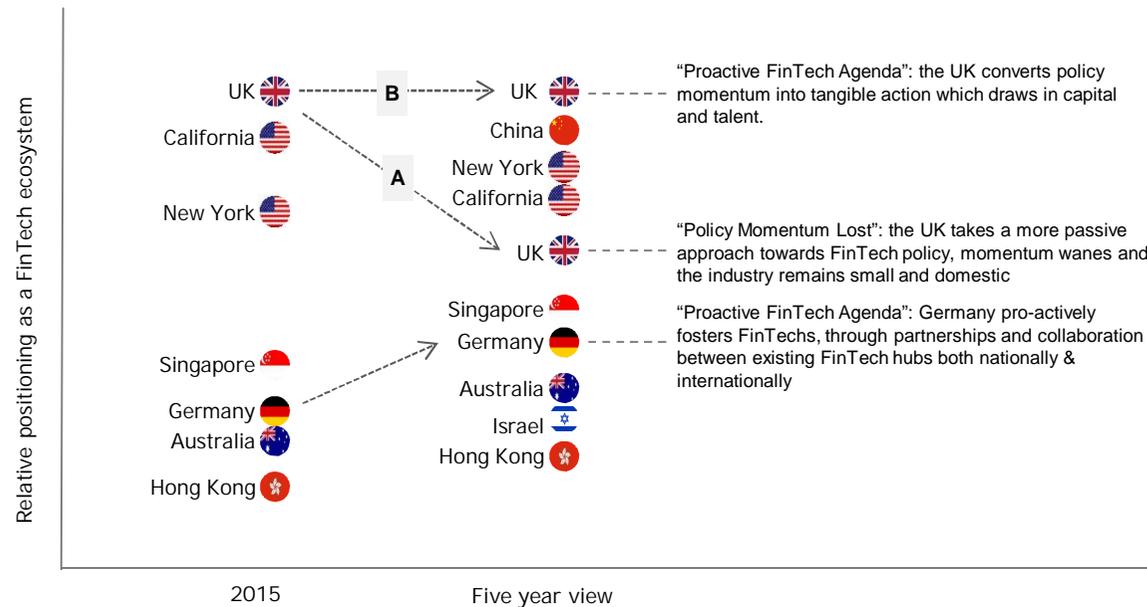


Source: EY analysis - HM Treasury Benchmarking Study 2016

Germany is expected to catch up in the competition with the top global FinTech regions

- ▶ The established Anglo-Saxon FinTech regions are clearly leading compared to their Asian and European competitors
- ▶ The scenarios illustrate that the UK is at risk of losing its global lead to China, New York and California in the case of a more passive approach towards FinTech policy
- ▶ Germany is among the top 8 global FinTech regions in the field of the followers, but is expected to catch up based on its economic strengths and market potential towards the leading regions

Scenario analysis – Relative positioning of leading FinTech regions

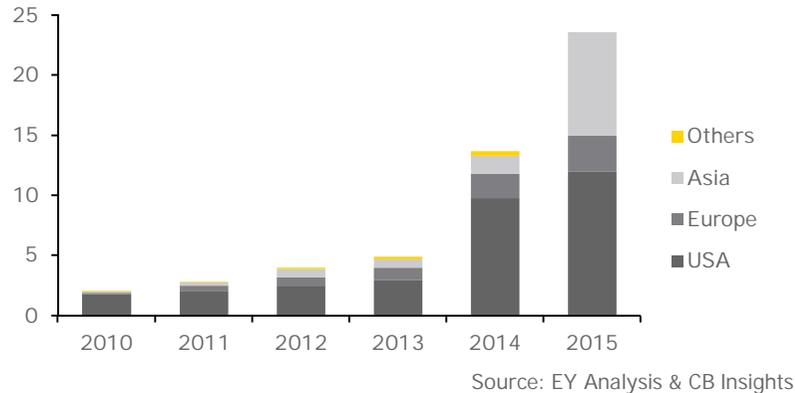


Source: EY analysis – HM Treasury Benchmarking Study 2016

The FinTech market is extremely dynamic and demands regions to be pro-active and drive development of the FinTech ecosystem in order to maintain and improve existing market positions

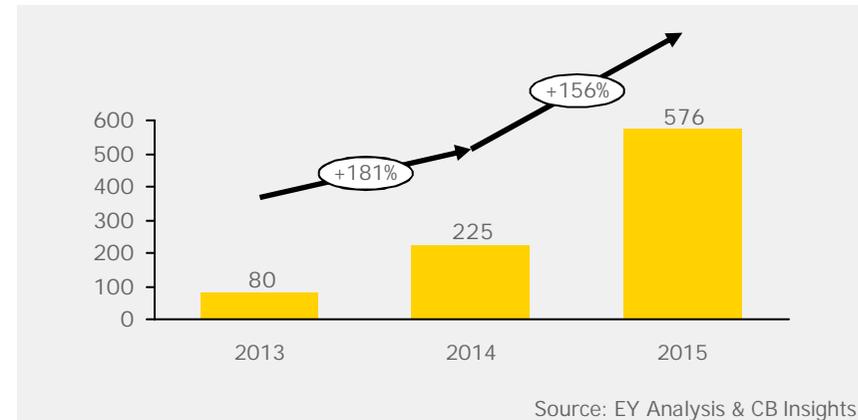
German FinTech investment growth is disproportionate compared to global investment

Global Fundraising in bn €



- Global investment volume has increased steadily since 2010
- 2015 saw another tremendous increase in FinTech investments with a total investment of ≈ 25 bn US\$
- Globally, Asia showed the strongest investment growth in 2015

German Fundraising in mn €



* Does not include 360T transaction of 750mn US\$

- Significant growth of FinTech investments in Germany in the last 2 years (from 80mn € in 2013 \Rightarrow 576mn € in 2015). Including the 360T transaction, the investment volume totals over ≈ 1.2 bn € in 2015.
- Germany is on track to close the FinTech investment gap with the UK market (UK investments 2015 = 707mn €)
- Availability of capital is seen as good for seed capital but more investors providing Growth Capital are required
- Investment (especially seed funding) is expected to continue to grow in 2016

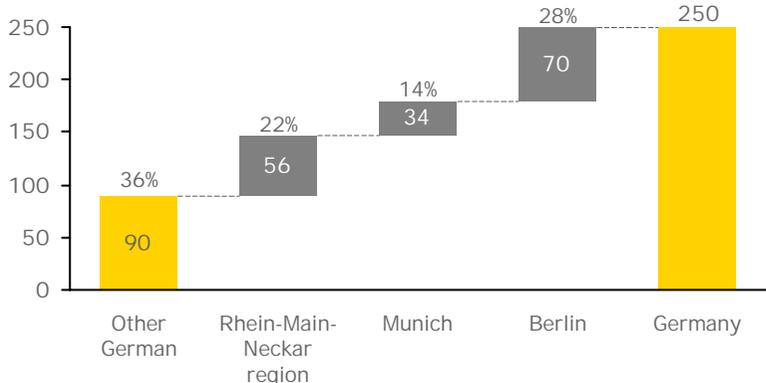
On a European level, Germany is catching up with the UK market in terms of absolute FinTech investment but needs to further develop its investor landscape to provide more growth capital

The German market has grown significantly to 250 FinTechs in 2015

Key findings

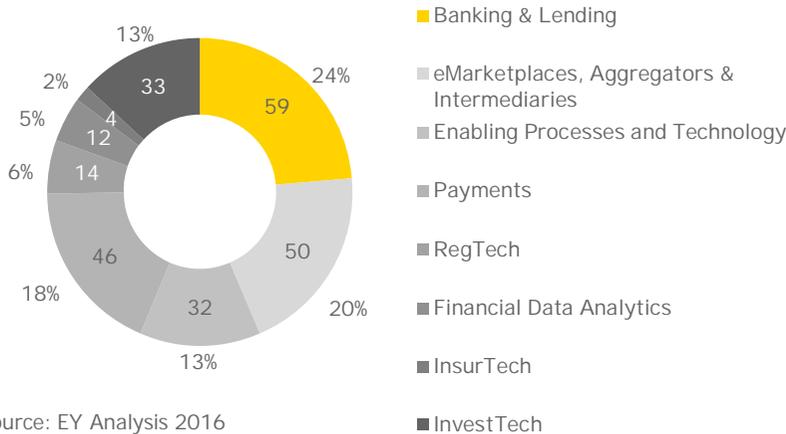
- ▶ German FinTech activities and the development of a FinTech ecosystem have started later compared to other global regions.
- ▶ The German FinTech market has been growing by more than 70% since 2013 and currently consists of ≈ 250 companies.
- ▶ The German FinTech market is fragmented but has developed three main hubs: Berlin, Rhein-Main-Neckar region and Munich, each standing for a distinct characteristic.

Germany's FinTech Universe by City (2016)



Source: EY Analysis 2016

Germany's FinTech Universe: Cluster Breakdown (2016)



Source: EY Analysis 2016

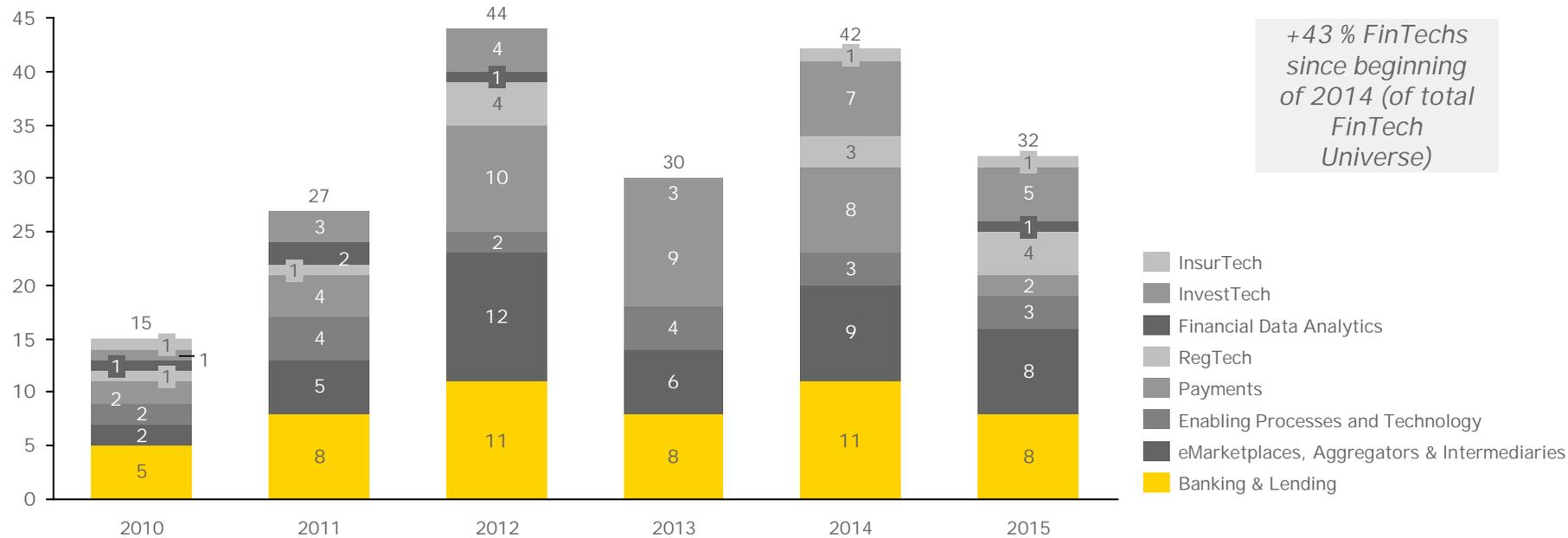
- Banking & Lending has been and still is the most dominant segment.
- The eMarketplaces, Aggregators & Intermediaries segment, including FinTechs such as Finanzcheck.de, has continuously grown and is still one of the most popular segments for new FinTech start-ups.
- The Payments segment has been receiving increased attention since 2012 with Mobile Payments as well as Virtual Currencies pushing segment growth.
- Since 2010, the B2B segment has gained attention but is still behind B2C development.

Germany is a fast growing and dynamic market with increasing activity in InvestTech in recent years – regional clustering will help to strengthen market proposition

Since 2013 the number of FinTechs in Germany has grown by more than 70%

- Key findings**
- Banking & Lending (especially with Alternative Financing) has dominated since 2010
 - eMarketplaces & Aggregators and Payments gained traction in 2011 with growth rates of more than 50% in 2012 (especially Aggregators & Intermediaries and Mobile Payments)
 - InvestTech activity has shown significant market growth since 2014 and the trend is expected to continue
 - Major activity and growth is expected in the (sub) segments Data Analytics, InsurTech and Infrastructure

Germany's FinTech Universe by Maturity (2010-2015)



Source: EY Analysis 2016

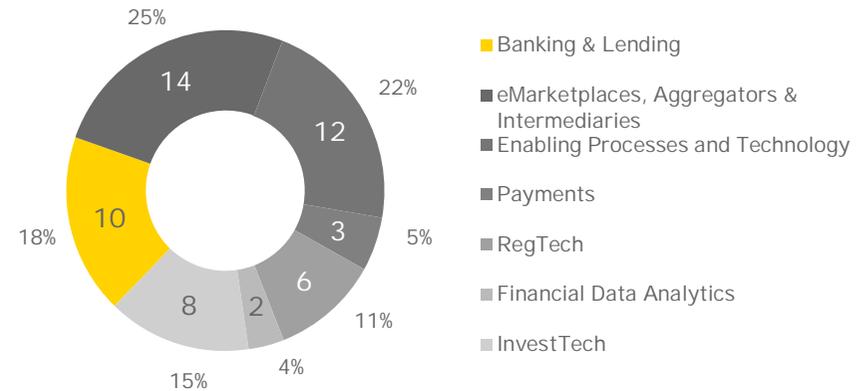


Rhein-Main-Neckar region is the #2 FinTech hub and showed above average growth in 2015

Key findings

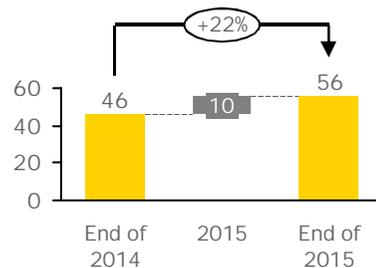
- ▶ Rhein-Main-Neckar region comprises the second-largest FinTech hub in Germany, serving as a base for 56 companies (22%) of the identified universe
- ▶ The Banking & Lending market has grown over the past years and is now the dominant segment together with platform markets and processes and technology
- ▶ With 22% the region experienced a higher growth rate than the rest of Germany in 2015
- ▶ The FinTech Universe of the Rhein-Main-Neckar region is more mature than that of Germany's other rival cities

Frankfurt's FinTech Universe: Cluster Breakdown (n = 56)

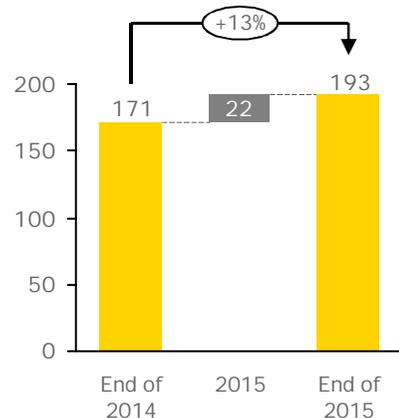


Source: EY Analysis 2016

New FinTechs in Rhein-Main-Neckar region*



New FinTechs in rest of Germany*



* Calculation based on FinTechs with identified year of foundation only

Successful Frankfurt FinTechs



Rhein-Main-Neckar has a strong foundation to develop into leading European FinTech hub

Leverage existing strengths for FinTech activities

Consider development opportunities for the region

- 1. Close distance to headquarters of FS providers 
- 2. Access to FS and regulation-related know-how and capabilities 
- 3. Excellent regional infrastructure (universities, traffic, internet junction) 
- 4. Large pool of academic excellence in FS and IT 

- 1. Strengthen the local FinTech ecosystem to be perceived as lively start-up location and not as "home of bankers and consultants" 
- 2. Develop and communicate a regional FinTech proposition 
- 3. Support the settlement of an investor landscape in the Rhein-Main-Neckar Region (Business Angels, VCs and PEs) 

Frankfurt has great potential to become the leading German FinTech hub which requires coordination of FinTech activities and a clear proposition considering existing regional strengths

Rhein-Main-Neckar as Germany's international FinTech gateway and B2B focused FinTech hub

1 International FinTech gateway in Germany

Develop strong collaboration and network with other international FinTech hubs (e.g. Tel-Aviv, Singapore, South Korea), based on University projects, joint conferences and events and support them in Germany.

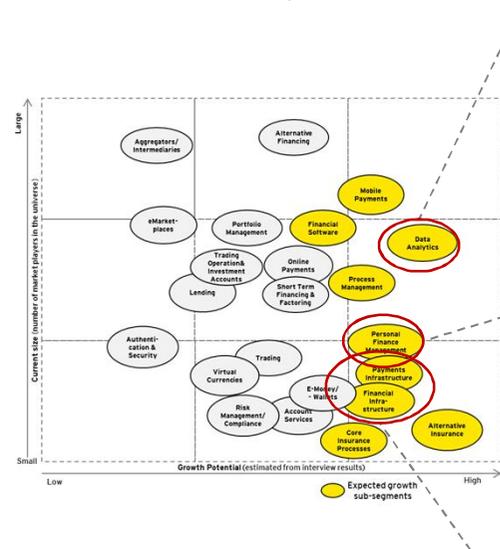
2 Focus on B2B business models

Focus on B2B business models, such as infrastructure innovations and data analytical improvements which combine Technology and Financial Services expertise.

3 Use of proximity to financial services

Close collaboration between traditional financial services institutions and FinTech corporations, based on integrated business models, support of show case projects, and direct support and mentoring of Start-ups to contribute to improving the customer journey.

Data Analytics: As technological systems advance and the world transitions to an "Internet of Things" (IoT), the collection, analysis and interpretation of data will increasingly become a more important differentiator for all companies.

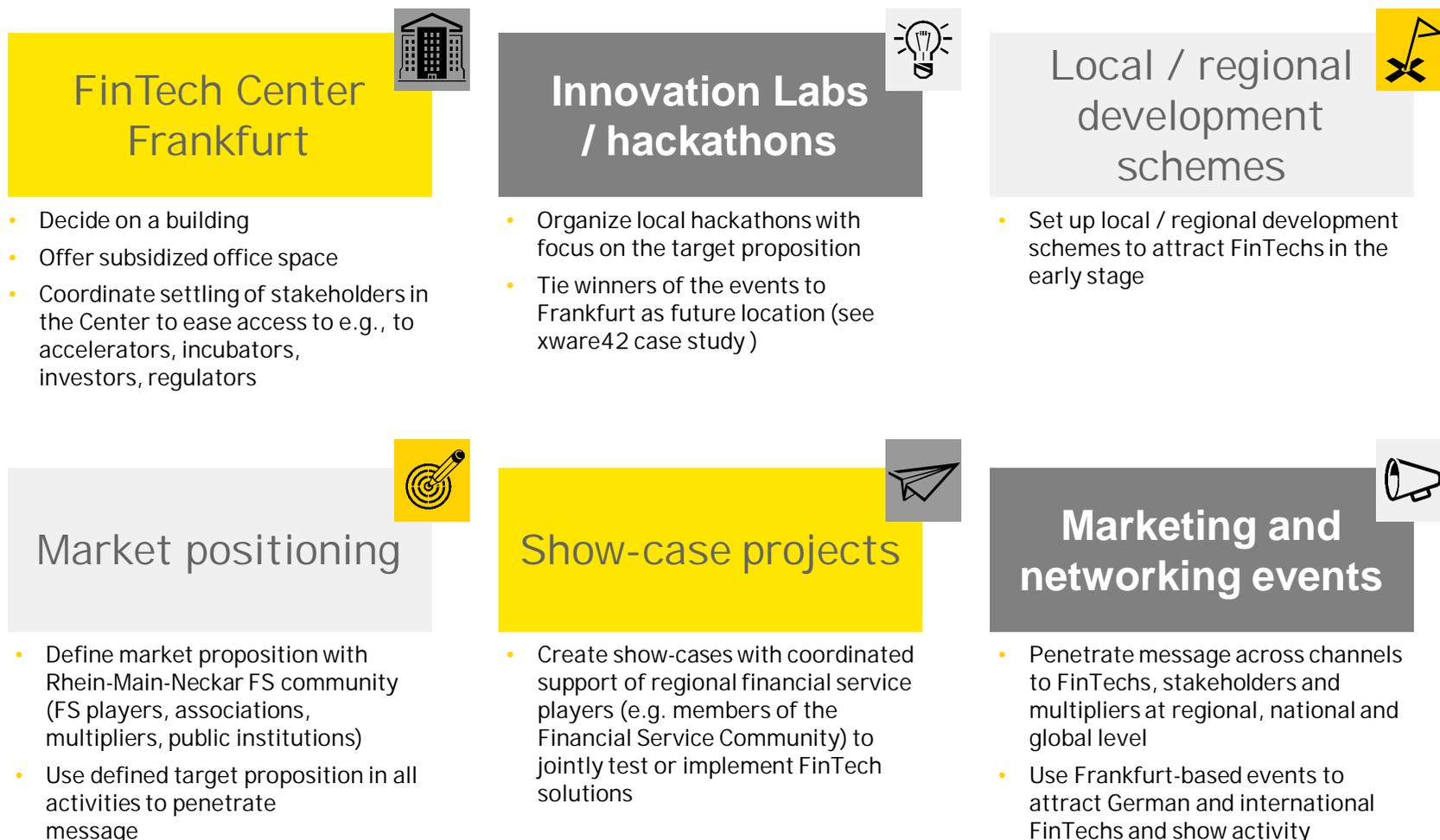


Personal Finance Management: PFM has the potential to replace online banking in its current form and to set new standards in terms of customer relationships.

Infrastructure: Solutions in the space of financial infrastructure are assumed to have a huge growth potential, as basis for required efficiency and flexibility in the technological solutions in the Financial Services industry. Blockchain will be one major disruption in the Payments segment.

Rhein-Main-Neckar region has to differentiate itself through a focus on certain segments fit to location attributes (i.e. banking expertise) and develop a reputation for

We identified six short term fields of action to execute Rhein-Main-Neckar's FinTech journey



Summary of findings

- ⇒ Germany is benchmarked with peers in the top 8 global FinTech regions and is expected to catch up compared to the global competitors
- ⇒ FinTech investments show strong growth rates in Germany and are approaching the UK's absolute investments for 2015
- ⇒ Strong growth with already 250 FinTechs in Germany – fragmented location landscape but concentration in three German FinTech Hubs
- ⇒ In 2015 Rhein-Main-Neckar's FinTech growth was above average compared to the rest of Germany
- ⇒ The existing banking infrastructure is a major advantage for Frankfurt as the leading German FinTech hub

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Appendix

Germany ranks as a follower with strong future potential in the group of the top 8 global regions

- ▶ UK leads the ranking of top global FinTech regions with good scores in all Ecosystem attributes
- ▶ There is a significant gap between the three leading Anglo-Saxon FinTech regions and the remainder of the group
- ▶ Germany is ranked 5th, on par with Australia, which correlates with the maturity of the German FinTech Ecosystem

Region	2015 Rank by Ecosystem Attribute				Total Points
	Talent	Capital	Policy	Demand	
	- Talent availability - Talent pipeline	- Seed - Growth - Listed	- Regulatory regimes - Government programs - Taxation policy	- Consumers - Corporates - Financial institutions	
UK 	2	3	1	3	9
California 	1	1	6	2	10
New York 	3	2	7	1	13
Singapore 	4	7	2	6	19
Germany 	6	4	5	5	20
Australia 	5	5	3	7	20
Hong Kong 	7	6	4	4	21

Source: EY analysis - HM Treasury Benchmarking Study 2016

In order to catch up with the leading FinTech hubs, Germany will have to provide a well-tuned ecosystem to attract talent as well as capital and improve the regulatory environment

Talent

- ▶ California is leading as a provider of top talent, especially for tech skills.

Capital

- ▶ With Silicon Valley, California has long been an attractive spot for investors seeking innovative new start-ups.
- ▶ Also the failure culture has been ideal to foster start-up activity.

Policy

- ▶ Compared to Germany's BaFin, the FCA in the UK is extremely open towards FinTechs and actively supports the development of new business models.

Demand

- ▶ Being one of the world's largest financial capitals and a metropolis, New York offers huge market potential.

Snapshot of Germany's FinTech segments

		# FinTech foundations per year	Expected trend															
<p>Payments</p>	<p>FinTechs within this segment enable the exchange of products, services by provision of an agreed value. This includes Payments infrastructure, Virtual Currencies, Online and Mobile Payments and E-Money/-Wallets.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>2</td><td>4</td><td>10</td><td>9</td><td>8</td><td>2</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	2	4	10	9	8	2		
Year	2010	2011	2012	2013	2014	2015												
Foundations	2	4	10	9	8	2												
<p>Banking & Lending</p>	<p>The Banking & Lending segment includes FinTechs offering core bank services like lending services & products, short term financing and factoring, alternative financing in terms of crowdfunding for both B2B and B2C as well as P2P, account management (opening, maintaining, switching accounts).</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>5</td><td>8</td><td>11</td><td>8</td><td>11</td><td>8</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	5	8	11	8	11	8		
Year	2010	2011	2012	2013	2014	2015												
Foundations	5	8	11	8	11	8												
<p>Financial Data Analytics</p>	<p>Business models of the financial data & analytics market provide significant opportunities for companies to use data analysis to e.g. improve the consumer experience, monitoring of business activities or manage credit risk and as well as data enrichment services to combine various sets of data from several sources.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>1</td><td>2</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	1	2	1	0	0	1		
Year	2010	2011	2012	2013	2014	2015												
Foundations	1	2	1	0	0	1												
<p>InvestTech</p>	<p>InvestTech covers the scope of trading with traditional trading activities, portfolio management including investment analytics for decision-making for both businesses and private traders. The segment also comprises business models addressing Trading operations & investment accounts on the B2B side.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>1</td><td>3</td><td>4</td><td>3</td><td>7</td><td>5</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	1	3	4	3	7	5		
Year	2010	2011	2012	2013	2014	2015												
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Source: EY analysis 2016

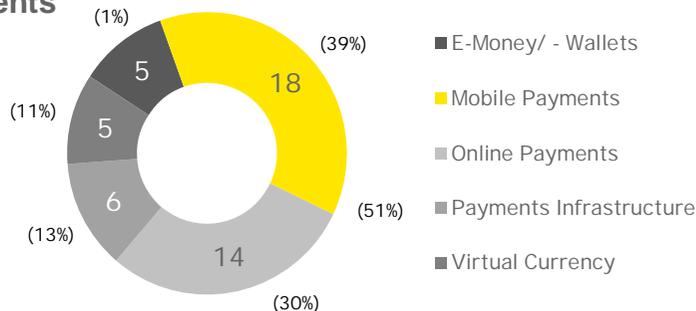
Snapshot of Germany's FinTech segments (cont'd)

		# FinTech foundations per year	Expected trend															
<p>Enabling Processes & Technology</p>	<p>FinTechs within this segment provide a new or altered financial infrastructure to enable products and processes. In addition, FinTechs offer solutions to optimize process management or financial software supporting processes and functions.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>2</td><td>4</td><td>2</td><td>4</td><td>3</td><td>3</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	2	4	2	4	3	3		
Year	2010	2011	2012	2013	2014	2015												
Foundations	2	4	2	4	3	3												
<p>eMarketplaces, Aggregators & Intermediaries</p>	<p>While eMarketplaces offer the possibility to directly purchase a financial service or product, Aggregators & Intermediaries levy a fee for a service rather than providing the service themselves. Platform markets are online marketplaces that generally provide third-party products (B2B / B2C).</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>2</td><td>5</td><td>12</td><td>6</td><td>9</td><td>8</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	2	5	12	6	9	8		
Year	2010	2011	2012	2013	2014	2015												
Foundations	2	5	12	6	9	8												
<p>RegTech</p>	<p>In this business segment are FinTechs offering solutions to financial services organizations to help to comply with regulatory requirements and manage risks. RegTechs also cover the scope of user authentication e.g. fingerprint or voice recognition technology and software as well as security applications.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>1</td><td>1</td><td>4</td><td>0</td><td>3</td><td>4</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	1	1	4	0	3	4		
Year	2010	2011	2012	2013	2014	2015												
Foundations	1	1	4	0	3	4												
<p>InsurTech</p>	<p>InsurTechs impact the incumbent insurance business through innovations in (digital) products and operations. Examples are data-driven and usage-based insurance or digital claims processing software.</p>	<table border="1"> <tr><th>Year</th><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td></tr> <tr><th>Foundations</th><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr> </table>	Year	2010	2011	2012	2013	2014	2015	Foundations	1	0	0	0	1	1		
Year	2010	2011	2012	2013	2014	2015												
Foundations	1	0	0	0	1	1												

Source: EY analysis 2016

Banking & Lending and Payments are among top 3 – Data Analytics yet to unfold its potential

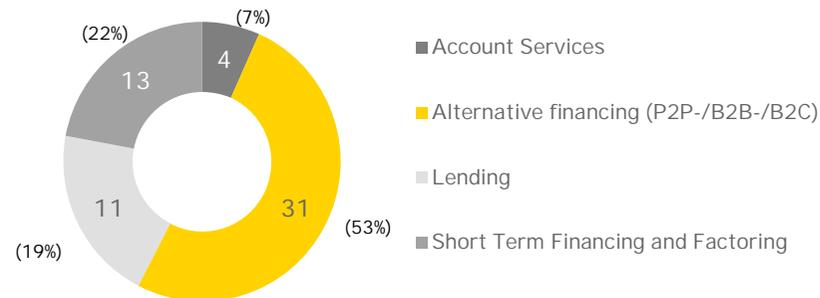
Payments



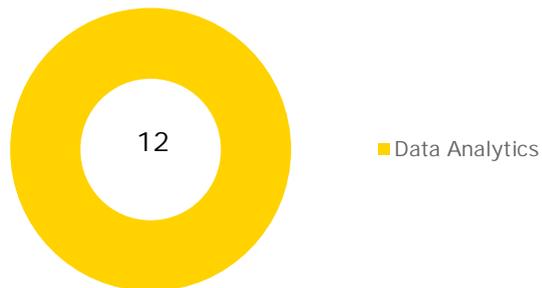
- FinTechs within this segment enable the exchange of products and services by provision of an agreed value. This includes Payments infrastructure, Virtual Currencies, Online and Mobile Payments and E-Money/-Wallets.
- In regards to blockchain, the market is expected to experience tremendous changes, virtual money has the potential to revolutionize the current traditional payment landscape and it is widely expected that the online sector will continue to grow, **leading** to an increase in online and mobile payments.

Banking & Lending

- The Banking & Lending segment includes FinTechs offering core bank services like lending services & products, short term financing and factoring, alternative financing in terms of crowdfunding for both B2B and B2C as well as P2P, account management.
- Mature players in this segment have experienced rapid growth in little time and have received some of the highest investment in the DACH Fintech market.



Financial Data Analytics

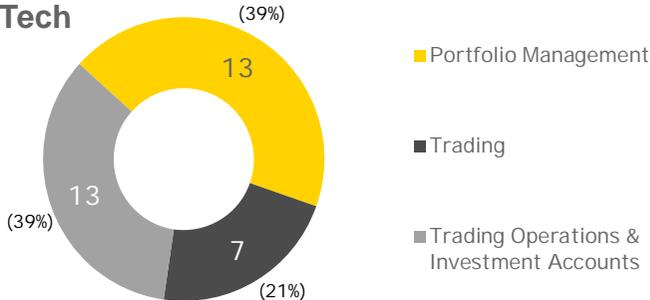


- FinTechs in the Financial Data & Analytics segment provide significant opportunities for companies to use data analysis to e.g. improve the consumer experience, monitoring of business activities or manage credit risk and as well as data enrichment services to combine various sets of data from several sources.
- Developments in Data Analytics have been closely tracked by market participants, and a growing number of institutions have increasingly invested in the implementation, most likely signifying the start of a multi-year investment growth cycle.

Source: EY analysis 2016

Aggregators grew in the past but Infrastructure and InvestTech bear tremendous potential

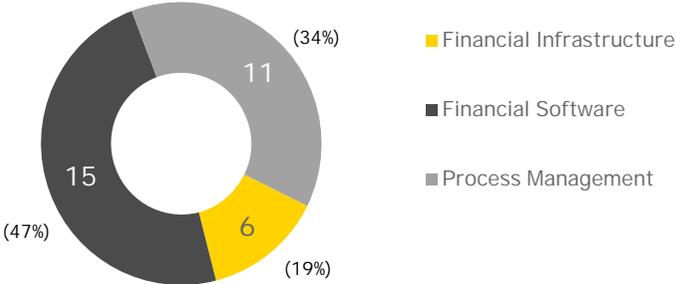
InvestTech



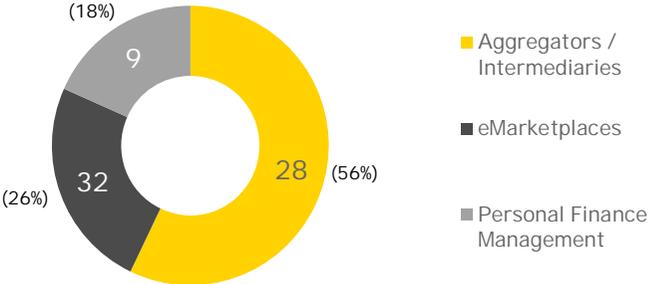
- InvestTech covers the scope of trading with traditional trading activities, portfolio management including investment analytics to support decision-making for both businesses and private traders. The segment also comprises business models addressing Trading operations & investment (B2B).
- While the trading platforms market is highly fragmented and might face consolidation throughout the upcoming years, the market for automatized portfolio management is steadily growing. FinTechs active in trading and investing segment continue in creating new disruptive and innovative solutions.

Enabling Processes & Technology

- FinTechs within this segment provide a new or altered financial infrastructure to enable products and processes. In addition, FinTechs offer solutions to optimize process management or financial software supporting processes and functions.
- The market has seen major transformation in recent years and this trend is expected to continue as digitization will continue transform the banking landscape in both business as well as technological terms.



eMarketplaces, Aggregators & Intermediaries



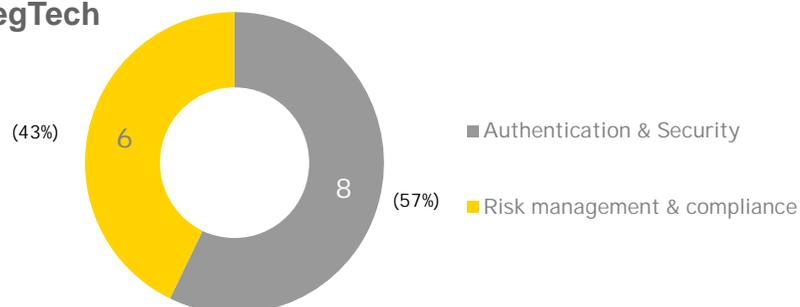
- While eMarketplaces offer the possibility to directly purchase a financial service or product, Aggregators & Intermediaries levy a fee for a service rather than providing the service themselves. Platform markets are online marketplaces that generally provide third-party products (B2B / B2C).
- eMarketplaces are likely to benefit from further digitization and especially an increase in trust in online products and service among consumers.

Source: EY analysis 2016



Both RegTech and InsurTech are in their infancy but seen as future growth drivers

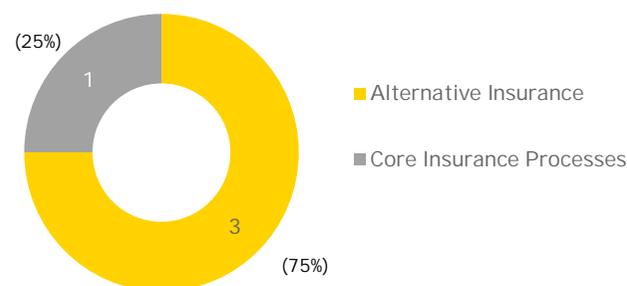
RegTech



- FinTechs in this business segment offer solutions to financial services organizations to help comply with regulatory requirements and manage risks.
- RegTechs also cover the scope of user authentication e.g. fingerprint or voice recognition technology and software as well as security applications.

InsurTech

- Impact on insurance incumbents through innovations in (digital) products and operations. E.g. data-driven and usage-based insurance or digital claims processing software.
- Business models focusing on infrastructure, back-office functions and B2B big data or analytics solutions are exclusively covered by software providers or in-house solutions. In the medium to long term, business models might increasingly move from predominant B2C and front-office to back-office.



Just as the overall FinTech market, which has developed later and at a slower speed than other markets due to complex landscapes and regulation, B2B has been a largely untapped market as business models and solutions are generally heavy data- or technology-based

Banking & Lending and Aggregator business models have been predominant but the market is expected to shift to growing PFM, Data Analytics and Infrastructure segments addressing B2B and back-office functions

Source: EY analysis 2016

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